

# **DIRECT CONVERSION WIRELESS RECEIVER WITH DIGITAL PHASE EQUALIZATION**

## **ABSTRACT OF THE INVENTION**

A direct conversion receiver (DCR) with a pair of quadrature conversion paths. Each of the quadrature conversion paths receives an RF input signal and converts the RF input signal to a digital baseband signal. The quadrature conversion paths each include a mixer mixes the RF input signal with a carrier phase signal. Quadrature baseband signals from the mixer pass through an analog filter which provides a filtered baseband signal. An analog to digital converter (ADC) converts the quadrature baseband component to a digital baseband signal. A 5<sup>th</sup> order elliptical filter filters the quadrature baseband component. The 5<sup>th</sup> order elliptical filter may be before or after the ADC. A digital baseband component from the ADC and filtered by the 5<sup>th</sup> order elliptical filter passes to a phase equalizer which compensates for phase distortion from the analog filter. The quadrature digital baseband outputs from the quadrature conversion paths are passed to a baseband processor.